

Abstract

Based on career construction theory, the current research examined individual and contextual predictors for the professional competence of Chinese undergraduates majoring in social work ($N = 270$). Results showed that career concern and career curiosity predicted social work students' professional competence, with these relations mediated by the calling in social work. It was also found that the positive effect of calling on professional competence was stronger among students who perceived a lower level of career-oriented learning environment. The corresponding moderated mediation model was supported such that the indirect effects of career concern and career curiosity on professional competence were stronger among students who perceived a lower level of career-oriented learning environment. These findings carry implications for research on career construction theory, as well as career education and career counseling practices.

Keywords: career adaptability, calling, career-oriented learning environment, career construction theory

Career Adaptability, Calling and the Professional Competence of Social Work Students
in China: A Career Construction Perspective

The profession of social work seeks to improve the subjective well-being of individuals affected by social disadvantages (e.g., poverty, mental and physical illness or disability, social injustice) through research, policy making, intervention practices, and teaching activities (Reid & Edwards, 2006). Although the professional education system for social workers is well-established in many Western countries, this is not the case in China. The social work profession was suspended by the Chinese government from 1949 to late 1980s based on the assumption that no social problems would exist within a socialist system (Li, Han, & Huang, 2012). Since the 1990s, with the overarching aim of creating a harmonious society, the central government started to realize the important role of social workers in delivering social services and sought to develop social work educational programs in China (Li, Han, & Huang, 2012).

Following two decades of rapid development, China currently has 266 Bachelor's Degree programs and 61 Master's Degree programs in social work (Xinhua Net, 2013). However, social work education in China is still developing and there exist concerns among social work students that what they have learned in colleges and universities may not enable them to address complicated professional problems and to cope with the unpredictable challenges during their careers (Liu, Sun, & Anderson, 2013). In addition, limited job opportunities and uncertain career prospects in the social work profession present additional career development difficulties for social work students in China (Sha, Wong, Lou, Pearson,

& Gu, 2012). Given this background, research on the predictors of professional competence carries important implications in facilitating social workers' career development in the Chinese context.

Accordingly, the current research examined the individual and environmental predictors of professional competence among social work students in China. Based on career construction theory (Savickas, 1997, 2005, 2013; Savickas, Nota, Rossier, Dauwalder, Duarte, Guichard et al., 2009), we selected career adaptability as a major individual predictor of professional competence. Career adaptability refers to the "readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions" (Savickas, 1997, p. 254). We propose that career adaptability will positively predict professional competence of social work students. To further examine the underlying mechanisms of this relationship, we argue that students' calling (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997), which reflects individuals' passion to implement their life meanings in the pursuit of social work profession, will serve as an important mediator in this process.

Specifically, we argue that two dimensions of career adaptability, namely career concern and career curiosity, enable individuals to develop a more accurate understanding of themselves and the social work occupation, and to better prepare themselves for the profession. As a result, for students with a high level of career concern or career curiosity, their choices of the social work profession are likely to be based on the match between life meanings and occupational characteristics. Consequently, these students will achieve a high

level of calling towards the profession of social work. A high level of calling will further drive individuals' efforts of developing professional competence. To comprehensively examine how individual and contextual factors collectively affect professional competence, the current research also incorporated the career-orientated learning environment (Kuijpers, Meijers, & Gundy, 2011) as a contextual predictor for students' professional competence.

We propose that due to the positive effects elicited by practice-based learning experiences and interactive dialogues (Kuijpers et al., 2011), a career-oriented learning environment will have a unique contribution in predicting professional competence, above and beyond the prediction of career adaptability and calling. Moreover, from a person-environment interaction perspective, we further propose that there may exist interactions between calling and learning environment in predicting career competence, such that individuals' calling to pursue a career in social work will play a more important role in sustaining their professional competence development when they perceive their environment as providing a lower level of career-oriented learning opportunities. The above discussion suggests that there exists a moderated mediation model for the relations among these variables, as showed in Figure 1.

Insert Figure 1 here

Career Adaptability, Calling and Professional Competence

Nowadays individuals' career paths are becoming less predictable and job transitions

are becoming more frequent. This means that individuals' self-regulatory resources play important roles in sustaining their long-term career development (Savickas, 1997, 2005, 2013; Savickas, Nota, Rossier, Dauwalder, Duarte, Guichard et al., 2009). According to the career construction theory, there exist four types of psychological resources that help individuals to cope with the challenges of career development (Savickas, & Porfeli, 2012), namely career concern (the ability of seriously considering future career possibilities and preparing for these possibilities), career control (the strength of making deliberate decisions and taking conscientious action), career curiosity (the ability in exploring various situations and potential roles) and career confidence (the positive perceptions of one's problem-solving skills). The positive effects of career adaptability on individuals' career-related outcomes have been established in recent research (e.g., Guan, Deng, Sun, Wang, Cai, Ye et al., 2013; Guan, Guo, Bond, Cai, Zhou, Xu et al., 2014; Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013; Tolentino, Garcia, Restubog, Bordia, & Tang, 2013).

As career concern enables individuals to imagine their future career possibilities and prepare themselves for these possibilities, and career curiosity enables individuals to effectively explore personal characteristics and occupational opportunities, we argue that these two types of adaptive-abilities are likely to facilitate the formation of calling towards a profession. Calling is usually defined as the consuming and meaningful passion people experience towards a profession (Bunderson, & Thompson, 2009; Dobrow & Tosti-Kharas, 2011; Hall & Chandler, 2005; Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). A high level of calling reflects a strong tendency to implement one's self-concept and life meanings

in the pursuit of target profession. As students with high career concern or career curiosity proactively identify the meanings of their careers through continuous future-oriented thinking and career exploration, the future profession they choose should be more compatible with their understandings of life meanings. Consequently, these two adaptive-abilities may relate positively to students' calling towards social work. Although career control and career confidence are also related to career preparation, the two dimensions may be more functional in achieving career goals rather than setting career goals. Therefore the positive effects of career adaptability on calling should be more salient on the dimensions of career concern and career curiosity.

From the perspective of career construction theory (Savickas, 2013), career is a process in which individuals impose personal meanings on their vocational choices, occupational transitions, and future aspirations. A high level of calling is likely to motivate individuals to develop the relevant career competence that helps them to meet career transitions with fitting responses. Consistently, it has been found that individuals' calling towards a specific profession has positive effects on their work meaning, career commitment, pursuit of professional goals, as well as career maturity (Dobrow & Tosti-Kharas, 2011; Duffy & Dik, 2013; Duffy, Dik, & Steger, 2011; Duffy, Manuel, Borges, & Bott, 2011; Hirschi & Herrmann, 2013). Based on the above discussion, we expect to observe a mediation model in which career concern and career curiosity positively predict students' calling, which in turn promotes their professional competence.

In this study we adopted the 10 core competencies of social workers as the indicators

of professional competence (Council on Social Work Education, 2008; Hooyman, 2009), which include: identifying as a professional social worker and conducting oneself accordingly, applying social work ethical principles to guide professional practice, applying critical thinking to inform and communicate professional judgments, engaging diversity and difference in practice, advancing human rights as well as social and economic justice, engaging in research-informed practice and practice-informed research, applying knowledge of human behavior and the social environment, engaging in policy practice to advance social and economic well-being and to deliver effective social work services, responding to contexts that shape practice, as well as engaging, assessing, intervening, and evaluating with individuals, families, groups, organizations, and communities. Based on the above discussion, we propose the following mediation model:

Hypothesis 1: Career concern and career curiosity relate positively to social work students' professional competence, with these relationships mediated by their calling.

The Role of Career-oriented Learning Environment

As individuals' professional competence is developed through the interactions between their internal and external worlds, it is necessary to investigate the roles of contextual factors in this process (Kuijpers et al., 2011). In current research we employed the concept of career-orientated learning environment to represent the extent to which a learning environment facilitates the construction of career competence through practice-based learning experiences and dialogues about these experiences (Bailey, Hughes & Moore, 2004; Blume, Ford, Baldwin, & Huang, 2010; Kuijpers et al., 2011; Savickas, 1997, 2005,

2013). Kuijpers et al. (2011) stated that compared with the traditional learning environment, a career-oriented learning environment is characterized by the focus on obtaining actual work experiences rather than information transfer, the consideration of both students' emotion and cognition, the creation of self-directed choices rather than a standard-learning route, the emphasis of mutual participation between teachers and students rather than a monologue from teacher to student, as well as the provision of continued guidance rather than interventions at certain institutionally determined decision-making moments.

Drawing on literature related to career education and employee training (Bailey et al., 2004; Blume et al., 2010; Kuijpers et al., 2011), the current research assessed students' perception of career-oriented learning environment from the following aspects: First, we argue that the content and instruments adopted in a career-oriented learning environment should be practice-based, relevant to students' long-term career development, focusing on transferable skills under different working contexts, and matching students' goals, values, interests, as well as knowledge structure and learning paces. Second, we propose that the career-oriented teaching methods, program organization and career guidance should employ practical case studies and integrate multiple teaching methods to increase students' involvement and strengthen their learning effects; enable students to have a say in arrangement of schedules and clearly understand the learning objectives; provide adequate time and practice opportunities for students to grasp relevant skills; arrange sufficient interactions, feedback, as well as continued guidance to support students' learning process (Bailey et al., 2004; Blume et al., 2010; Kuijpers et al., 2011). We propose that a high level

of career-oriented learning environment will facilitate the development of professional competence, above and beyond the prediction of career adaptability and calling.

Hypothesis 2: Career-oriented learning environment relates positively to social work students' professional competence, after controlling for the effects of career adaptability and calling.

In addition to the mediating models discussed above, we further examined the interaction between calling and learning environment in this process. We argue that the positive effect of calling on individuals' professional competence will be more salient when individuals perceive a lower level of career-oriented learning environment. That is, when the learning environment cannot support a practice-based learning experiences and interactive dialogues for career development, only those with a strong calling will proactively overcome these difficulties and develop the professional competence of social workers (e.g., Dobrow & Tosti-Kharas, 2011; Duffy & Dik, 2013). Thus, when there exists a career-oriented learning environment, this positive contextual factor will strengthen the professional competence of most students, especially for those who have a lower level of calling. In light of the above, we propose the following hypothesis:

Hypothesis 3. There is a two-way interaction between calling and learning environment in predicting professional competence, such that calling is more strongly related to professional competence when individuals perceive a lower level of career-oriented learning environment.

In addition, when individuals perceive a higher level of career-oriented learning

environment, calling is less likely to predict their professional competence, which means that calling is less likely to mediate the effect of career adaptability on professional competence. Accordingly, we propose the following moderated mediation model:

Hypothesis 4. Career-oriented learning environment moderates the indirect effects of career concern and career curiosity on professional competence, such that calling mediates the effects of these two types of adapt-abilities on professional competence only among those who perceive a lower level of career-oriented learning environment.

Method

Procedure and Participants

Participants were recruited among undergraduates majoring in social work from several large universities in China from January 2014 to April 2014. Faculty members in these universities were contacted and asked to help collect data among their students. Participants were instructed that the survey was anonymous and their responses would be used only for research purpose. A total number of 270 participants (97 males and 173 females) completed the survey. Their average age were 20.30 ($SD = 1.24$). Of them, 35% were first-year undergraduates, 37% were second-year undergraduates, 27% were third-year undergraduates and 1% were final-year undergraduates.

Instruments

Career Adaptability. Participants were asked to complete the Chinese version of the career adaptability scale (Hou, Leung, Li, Li & Xu, 2012), which consists of 24 items that

are divided equally into four subscales measuring the adaptive resources of concern, control, curiosity and confidence. Participants responded to each item on a scale from 1 (*not strong*) to 5 (*strongest*). For the global indicator, the Cronbach alpha was .93.

Calling. Participants' calling was measured by the scale developed by Dobrow and Tosti-Kharas (2011), which consists of 12 items. The Chinese version of this scale was translated by a Chinese bilingual translator. A native English speaker with good Chinese proficiency was then asked to back-translate these items. After the two translators compared the back-translation with the original scale and refined the Chinese translation through discussion, the final Chinese version was produced. A sample item was "I am passionate about being a social worker". Participants were asked to rate these items on a 5-point scale ("1" = "extremely disagree" to "5" = "extremely agree"). For the current investigation, the Cronbach alpha coefficient was .94.

Career-oriented Learning Environment. Based on previous research on career education and employee training (Bailey et al., 2004; Blume et al., 2010; Kuijpers et al., 2011) we adopted seven items to measure the career-oriented content and instruments: "The content and instruments link theories with practices, and provide practical guidance for students' career development", "the content and instruments are relevant to students' career development", "the content and instruments are comprehensive and fulfill the diverse needs of students", "the content and instruments focus on transferable skills under different working contexts", "the content and instruments match students' learning goals", "the content and instruments consider the values and interests of students", "the content and

instruments are compatible with the knowledge structure and learning paces of students”.

Twelve items were used to measure the career-oriented teaching methods, program organization and career guidance: “The learning process enables students to clearly understand the objectives of learning”, “the schedule of learning considers students’ learning paces and habits”, “students have a say in the arrangement of learning schedules”, “practical cases are often adopted to strengthen students’ learning of relevant career competence”, “multiple teaching methods are integrated to strengthen the learning effects”, “frequent professional education activities are arranged for students to grasp relevant skills”, “adequate practicing time is arranged for students to grasp relevant skills”, “adequate practicing opportunities are arranged for students to grasp relevant skills”, “the teaching process is interesting and stimulating”, “there exist adequate interactive discussions to get students involved in the learning process”, “sufficient feedback is provided on students’ learning progress” and “continued education and guidance are arranged to support students’ development”.

Participants were asked to rate these items on a five-point Likert scale (“1” = “*extremely disagree*”, “5” = “*extremely agree*”). The Cronbach alpha coefficient was .84 for career-oriented content and instruments, and .91 for career-oriented teaching methods, program organization and career guidance. As the correlation between two aspects of learning environment was very strong, $r(270) = .74, p < .001$, we computed the mean of these 19 items to represent the overall level of career-oriented learning environment, with a Cronbach alpha coefficient of .93.

Professional Competence. The professional competence of social work was assessed by 10 items tapping the core competencies of social workers (Council on Social Work Education, 2008; Hooyman, 2009), as discussed in the introduction part. Participants responded to each item on a scale from 1 (*not strong*) to 5 (*strongest*). The Cronbach alpha was .88.

Control Variables. To examine the unique contributions of career concern and career curiosity in predicting the mediator and outcome variables (Becker, 2005), we measured and controlled for the effects of participants' age, gender ("0" = "male", "1" = "female"), grade, family economic status ("1" = "very poor", "2" = "poor", "3" = "average", "4" = "rich", "5" = "very rich"), career confidence and career control.

Results

Descriptive Statistics and Correlations

The descriptive statistics and correlations between gender, age, grade, socioeconomic status, career confidence, career control, career concern, career curiosity, calling, career-oriented learning environment and professional competence are displayed in Table 1. The four dimensions of career adaptability were correlated with each other: career confidence correlated positively with career control ($r(270) = .70, p < .001$), career concern ($r(270) = .51, p < .001$) and career curiosity ($r(270) = .60, p < .001$); career control correlated positively with career concern ($r(270) = .59, p < .001$) and career curiosity ($r(270) = .73, p < .001$); career concern correlated positively with curiosity ($r(270) = .57, p < .001$). Meanwhile, career concern correlated positively with calling ($r(270) = .19, p$

< .01), career-oriented learning environment ($r(270) = .25, p < .001$) and professional competence ($r(270) = .43, p < .001$). Career curiosity correlated positively with calling ($r(270) = .19, p < .01$), career-oriented learning environment ($r(270) = .28, p < .001$) and professional competence ($r(270) = .40, p < .001$). Calling correlated positively with career-oriented learning environment ($r(270) = .43, p < .001$) and professional competence ($r(270) = .37, p < .001$). Career-oriented learning environment correlated positively with professional competence ($r(270) = .50, p < .001$).

 Insert Table 1 here

Examining the Mediation Models

The mediation hypothesis was examined by a procedure proposed by Preacher and Hayes (2008). By adopting the method of bootstrapping, this approach estimates the path coefficients as well as the size of indirect effects, and circumvents the disturbing problem of non-normality in sampling distribution (Preacher & Hayes, 2008). All continuous predictors were mean-centered for analysis, as suggested by Aiken & West (1991). The procedure outlined by Preacher and Hayes (2008) identified a three-step criterion to confirm a mediation effect. In the first step, the independent variable should have a significant relationship with the mediator. Second, the mediator should predict the dependent variable after controlling for the effect of the independent variable. The last step is to establish the significance of indirect effect through a bootstrapping test.

The results showed that after controlling for the effects of gender, age, grade, socioeconomic status, career confidence and career control, career concern ($B = .21, SE$

= .10, $t = 2.20$, $p < .05$) and career curiosity ($B = .27$, $SE = .13$, $t = 2.13$, $p < .05$) related positively to calling. When calling was added to the model, it significantly predicted professional competence ($B = .22$, $SE = .04$, $t = 5.64$, $p < .001$). Furthermore, the bootstrapping results revealed that the indirect effect of career concern was significant (95% $CI = [.01, .10]$). Likewise, the indirect effect of career curiosity was also significant (95% $CI = [.01, .14]$). The above results supported the mediation models, suggesting that calling simultaneously mediated the effects of career concern and career curiosity on professional competence.

Examining the Moderated Mediation Model

We adopted the procedure developed by Preacher, Rucker and Hayes (2007), to examine the moderated mediation model. In this procedure, we should test two regression equations, the “mediator model” (calling as dependent variable) and the “dependent variable model” (professional competence as dependent variable). The “mediator model” will be satisfied when the independent variables significantly predicts the mediator; and “dependent variable model” will be satisfied if the interaction between the moderator and the mediator was significant. We ran analysis after controlling for the effects of gender, age, grade, socioeconomic status, career confidence and career control. The results of these analyses are showed in Table 2.

 Insert Table 2 here

Both career concern and career curiosity significantly predicted calling, which has been tested in above mediation models. The results showed that the interaction between

calling and career-oriented learning environment was significant ($B = -.12$, $SE = 0.05$, $t = 2.90$, $p < .01$). We illustrated the moderation effect in Figure 2, which showed that when career-oriented learning environment was lower (one standard deviation below the mean), professional competence was significantly predicted by calling ($B = .21$, $SE = .05$, $t = 4.11$, $p < .001$); when career-oriented learning environment was higher (one standard deviation above the mean), however, this relationship was not significant ($B = .06$, $SE = .06$, $t = 1.15$, ns).

 Insert Figure 2 here

In support of the moderated mediation hypothesis, we estimated the indirect effect of career adapt-abilities on professional competence at a lower level and a higher level of career-oriented learning environment. The bootstrapping tests indicated that when career-oriented learning environment was lower, the indirect effect of career concern was significant, 95% $CI = [.01, .11]$; when career-oriented learning environment was higher, however, the indirect effect was not significant, 95% $CI = [-.01, .04]$. Similarly, when career-oriented learning environment was lower, the indirect effect of career curiosity was significant, 95% $CI = [.01, .13]$; When career-oriented learning environment was higher, however, the indirect effect was not significant, 95% $CI = [-.02, .05]$.

Discussion

Based on career construction theory, the current research examined the individual and contextual antecedents of professional competence among Chinese undergraduates majoring in social work. Results from a survey study showed that both career concern and

career curiosity predicted professional competence through the mediation of calling. In addition, the results further revealed that the positive effects of adapt-abilities and calling on professional competence were stronger among students who perceived a lower level of career-oriented learning environment. These findings carry several implications for research on career construction theory, as well as career education and career counseling practices.

Theoretical Implications

These results extend previous research on the positive roles of career adaptability in individuals' career development by showing that career adaptability can promote university students' calling and professional competence as well. The current study also delineates the distinct roles of career concern and career curiosity in predicting calling and professional competence. It is possible that career concern and career curiosity play more important roles in the selection of career goals by enabling individuals to focus on their future careers and explore different opportunities, whereas career control and career confidence are more important in achieving career goals by promoting individuals' problem-solving strategies and sustaining their efforts. Future research should continue to examine the predictive validity of career adaptability in other career-related outcomes, as well as the unique roles of different adaptive-abilities in individuals' career development. In addition, future research should continue to examine whether the results revealed in current study could be generalized to students in other majors.

This study also examined the dynamic relations among these variables by showing that calling serves as an important mediator between adaptive-abilities and professional

competence. That is, the adaptive-abilities strengthen students' professional competence by promoting their calling. Calling represents a strong belief that one's life meaning is closely related to the pursuit of social work profession, therefore it motivates students to develop relevant career competence to achieve their professional goals (Dobrow & Tosti-Kharas, 2011). Our study extends previous research on calling by empirically testing its antecedents, as well as its effect on professional competence. These findings also suggest that career construction theory can serve as an important theoretical framework to guide the investigation on how calling affects individuals' career development (Duffy & Dik, 2013). It's worth noting that the positive effect of career concern was not fully mediated by calling and future research may continue to examine other important mediators in this process.

In addition, the current research also examined the role of career-oriented learning environment in this process, which added evidence on how contextual contingencies shape individuals' career competence (Savickas, 2013). Consistent with previous findings that career-oriented environment facilitates the construction of career meanings through practice-based experiences and interactive dialogues (Kuijpers et al., 2011), we found that a high level of career-oriented learning environment also strengthens students' professional competence, after controlling for the effects of career adaptability and calling. These findings highlight the important role of learning environment in developing individuals' career competence. As the current study only focused on the general perceptions of learning environment, future research should continue to examine how the concrete education or counseling practices affect individuals' professional competence and career adaptability

(Kuijpers et al., 2011), to improve the practical implications of these findings.

The interactions between calling and career-oriented learning environment on professional competence further indicated that the positive effect of calling on individuals' professional competence will be more salient when individuals perceive a lower level of career-oriented learning environment. These findings enrich research on career construction theory by showing the interplay of the individual and contextual predictors in professional competence (Savickas, 2013). These findings suggest that under an adverse career development environment, students with a strong calling tend to proactively cope with these difficulties and develop their career competence, which adds new evidence on the positive role of calling in career development (e.g., Dobrow & Tosti-Kharas, 2011; Duffy & Dik, 2013). These findings also suggest that a career-oriented learning environment is especially important for students who don't have high career adaptability or strong calling in their major. Future research should continue to examine other contextual contingencies that may qualify the effects of calling on important career-related and work-related outcomes.

Practical Implications

The findings of current research provide guidance for career education and counseling practices as well. The positive role of career adaptability and calling revealed in this study suggests that both adaptive-abilities and calling can be adopted as important instruments to resolve problems related to the development of professional competence. For example, in the career decision-making contexts like choosing a major, career adaptability and calling can be adopted as tools to help students gain insights on how to fit

their career choices with their life themes. Among students who have already made their career choices, these tools can also be used to diagnose the reasons why individuals can't get involved in the development of their professional competence.

On the other hand, the positive effects of career-oriented learning environment also suggest that students' professional competence is likely to be enhanced when the learning environment incorporates practice-based learning experiences and dialogues about these experiences. Informed that students' professional competence is promoted by the practice-based learning materials and concrete learning experiences, universities should consider helping students to gain more field experiences by creating practical opportunities outside the campus. In addition, educators should bear in mind that they should encourage students to become more self-directed in their careers, and provide sufficient opportunities for interactive communication during the teaching process. In sum, the development of students' professional competence will benefit from the efforts of setting up a career-oriented learning environment.

Limitations and Future Directions

Despite the theoretical and practical implications discussed above, the current research has several limitations. First, as the current research was conducted among a sample of students from several universities in China, whether the findings discussed above could be generalized to other social work students in China remains to be examined in future research. In addition, future research should also examine whether the current research findings could be replicated in other cultural settings. Second, our analyses utilized

cross-sectional data and we cannot assert causality. Career adaptability, calling, perceived career-oriented environment and professional competence may be reciprocally related rather than one causing the other. Future research should utilize research designs that can address questions of causality.

Third, all of our analyses rely on self-report data from participants, which may carry common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In addition, it is arguable that the perception of learning environment also reflects participants' observation bias and self-serving bias. Although the current study relied on self-reports from participants, these possible biases were circumvented by instructing participants to answer each question independent of the other questions, and that their responses would be anonymous. Moreover, the major findings of the current study are moderated mediation effects and these effects are considerably less influenced by common method bias (Evans, 1985). Nevertheless, future research should seek to overcome this limitation by using alternative sources of data, such as informant reports from friends or mentors.

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Table 1

Descriptive Statistics, Reliability Coefficients, and Inter-Correlations among Variables

	<i>Mean</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Gender ^a	NA	NA	NA										
2. Age	20.30	1.24	-.14*	NA									
3. Grade	1.93	0.80	-.02	.74***	NA								
4. Socioeconomic Status (SES)	2.60	0.65	.15*	-.14*	-.06	NA							
5. Career Confidence	4.14	0.63	.09	.02	-.02	.03	0.85						
6. Career Control	3.94	0.62	.05	.07	.06	-.02	.70***	0.86					
7. Career Concern	3.65	0.68	.01	.05	.09	.04	.51***	.59***	0.83				
8. Career Curiosity	3.78	0.60	-.08	.05	.05	-.03	.60***	.73***	.57***	0.81			
9. Calling	2.76	0.84	-.09	.01	-.01	-.01	.08	.10	.19**	.19**	0.94		
10. Career-oriented Learning Environment	3.05	0.64	-.14*	.01	-.01	-.06	.12*	.22***	.25***	.28***	.43***	0.93	
11. Professional Competence	3.46	0.63	-.15*	.13*	.17**	-.01	.32**	.40***	.43***	.40***	.37***	.50***	0.88

Notes. ^a male = 0, female = 1. * $p < .05$. ** $p < .01$. *** $p < .001$. Reliability coefficients appear on the diagonal in bold.

Table 2

Examining Moderated Mediation Models

Mediator variable model with calling as dependent variable				
Variable	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>
Constant	.09	0.09	1.07	<i>ns</i>
Gender	-.10	0.11	-0.95	<i>ns</i>
Age	.01	0.06	0.20	<i>ns</i>
Grade	-.05	0.10	-0.52	<i>ns</i>
SES	.01	0.08	0.09	<i>ns</i>
Career Confidence	-.05	0.11	-0.40	<i>ns</i>
Career Control	-.16	0.14	-1.17	<i>ns</i>
Career Concern	.21	0.10	2.20	< .05
Career Curiosity	.27	0.13	2.13	< .05

Dependent variable model with professional competence as dependent variable				
Variable	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>
Constant	3.57	0.05	68.00	< .001
Gender	-.15	0.06	-2.31	< .05
Age	-.02	0.04	-0.60	<i>ns</i>
Grade	.14	0.06	2.46	< .05
SES	.02	0.05	0.41	<i>ns</i>
Career Confidence	.09	0.07	1.36	<i>ns</i>
Career Control	.13	0.08	1.60	<i>ns</i>
Career Concern	.16	0.06	2.83	< .01
Career Curiosity	.03	0.08	0.38	<i>ns</i>
Calling	.12	0.04	2.94	< .01
Career-oriented Learning Environment	.30	0.05	5.78	< .01
Calling × Career-oriented Learning Environment	-.13	0.05	-2.90	< .01

Conditional indirect effect as a function of career-oriented learning environment								
Value of Career-oriented Learning Environment	Concern				Curiosity			
	<i>Indirect Effect</i>	Boot SE	Boot LLCI	Boot ULCI	<i>Indirect Effect</i>	Boot SE	Boot LLCI	Boot ULCI
-1 <i>SD</i> (-0.64)	.04	0.03	0.01	0.11	.06	0.03	0.01	0.13
+1 <i>SD</i> (0.64)	.01	0.01	-0.01	0.04	.01	0.02	-0.02	0.05

Note. *N* = 270. Bootstrap sample size = 1000. Results were reported after controlling for gender, age, grade and socioeconomic status.

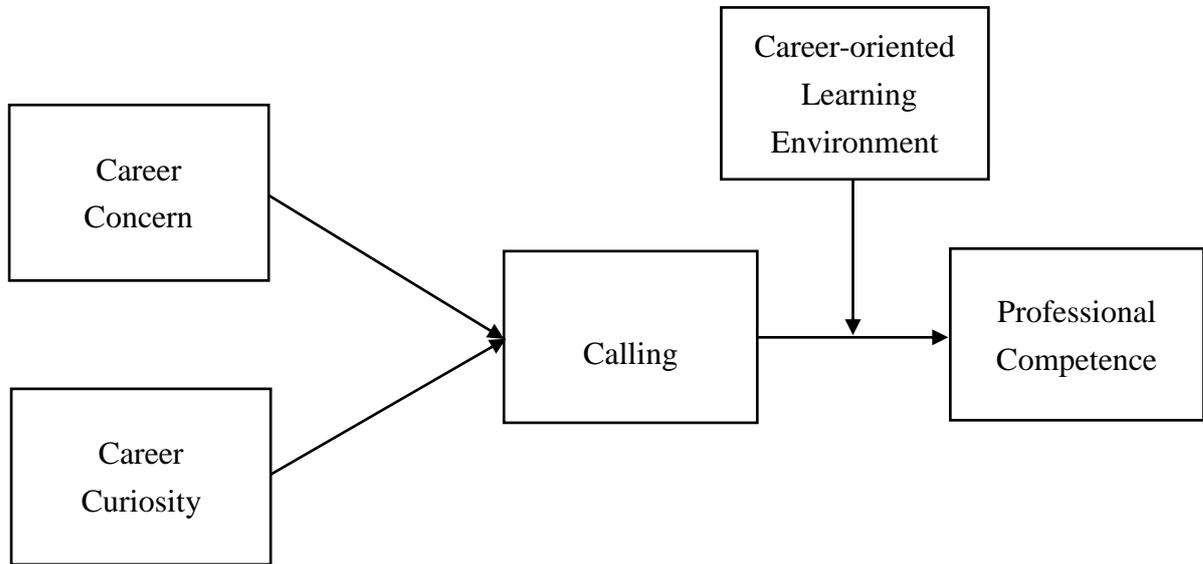


Figure 1. The Proposed Moderated Mediation Model

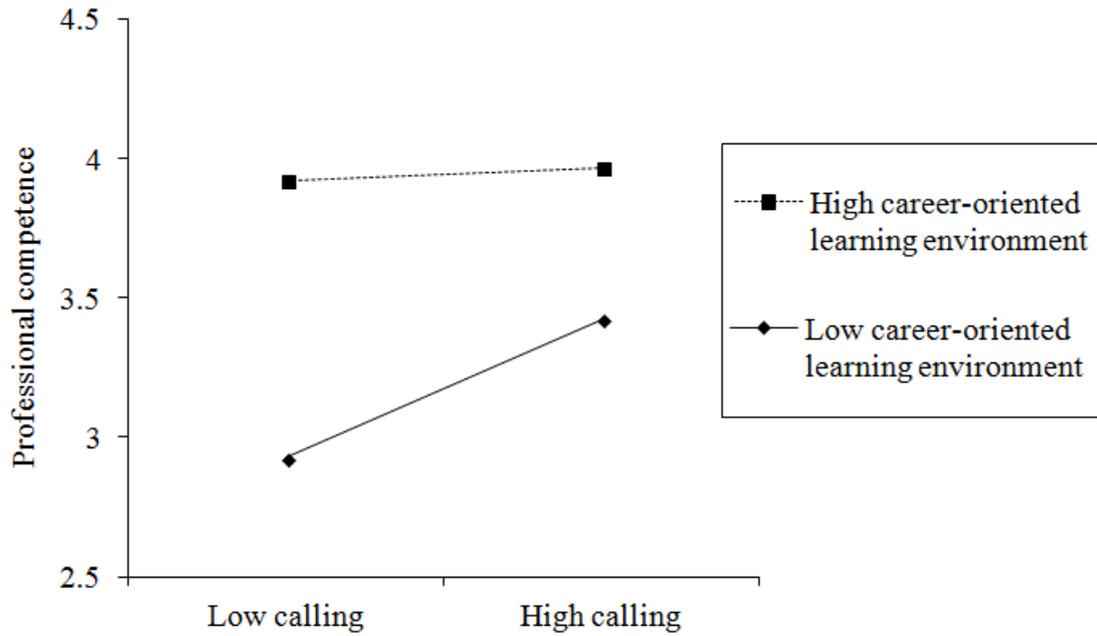


Figure 2. Interaction between Calling and Career-oriented Learning Environment on Professional Competence.

Notes: Low calling and low career-oriented learning environment are defined as at least one standard deviation below the mean; high calling and high career-oriented learning environment are defined as at least one standard deviation above the mean.

High numbers indicate greater professional competence.